

February 19, 2013

BY ELECTRONIC DELIVERY

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Re: Progeny LMS, LLC
Permitted Written *Ex Parte* Presentation
WT Docket No. 11-49

Dear Ms. Dortch:

Progeny LMS, LLC (“Progeny”), by its attorneys, herein addresses various incorrect and misleading assertions that have been filed in the record for the above referenced proceeding and, in doing so, seeks to bring clarity and closure to the question of whether Progeny’s E911 position location service can operate in the upper portion of the 902-928 MHz band without causing unacceptable levels of interference to Part 15 devices.

Progeny’s Network Buildout and Operations

Progeny is using its licensed spectrum in the multilateration location and monitoring service (“M-LMS”) to operate a fully deployed, commercial-grade position location network in much of the San Francisco Bay Area, portions of which have been operating almost continuously for three years. On January 22, 2010, Progeny, through its sister company, Comm Labs, Inc., secured experimental authority to operate an M-LMS network on a test basis in Santa Clara County using the upper portion of its C-block spectrum and actual operations began shortly thereafter.¹ On June 17, 2011, the experimental license was modified to authorize additional test operations in Progeny’s B-block spectrum and near continuous operations began on that spectrum immediately thereafter.² Other license modifications expanded the geographic reach of the test network to eventually include San Francisco and the East Bay.

¹ See ELS File No. 0563-EX-ST-2009 (call sign WE9XEP).

² See ELS File No. 0147-EX-ML-2011 (call sign WF2XLW).

The Commission's experimental licenses for Progeny's test operations authorize the use of power levels of up to 300 watts ERP across much of its spectrum and Progeny frequently operated its M-LMS network at this high power level. During most of the past three years, however, Progeny has operated its network at 30 watts ERP. Throughout all of this period, Progeny has not received any complaints of interference to Part 15 devices.

Progeny's opponent, Itron, Inc., recently claimed without any substantiation that Progeny's San Francisco Bay Area network "often was not operational, as Progeny engineers developed the system, which even last summer was not complete."³ Progeny has continued to make minor improvements to its network throughout the three year period, which has necessitated brief outages of a day or so while engineers made adjustments. These scheduled maintenance outages, however, are very infrequent and at all other times the network has been operating on a continuous basis at power levels of at least 30 watts ERP. Progeny has also continued to expand its network so that it now covers all of San Francisco, the East Bay and additional areas around the South Bay. These expansion efforts did not require any shut downs to the Santa Clara County network.

Progeny has also constructed its initial M-LMS networks and has begun continuous test operations in 38 other major Economic Areas ("EAs"), which include most of the largest urban markets in the country. Pursuant to Sections 90.155(d) and 1.946(d) of the Commission's rules, Progeny formally notified the Commission after it began operations for each of these networks. Progeny's M-LMS networks in 19 EAs were operational prior to the July 19, 2012 deadline for initial construction of M-LMS networks and were so notified to the Commission. Progeny subsequently notified the Commission after it began operating its M-LMS networks in 11 more EAs in September 2012, 7 more EAs in October 2012, and 2 more EAs in November 2012. Most of these networks have now been operating for more than six months and no complaints of harmful interference to Part 15 devices have resulted.

Itron attempts to challenge the relevance of the fact that Progeny has been operating its M-LMS network on a near continuous basis in 39 major EAs without resulting in any complaints of interference to Part 15 devices. Itron asserts "absence of past interference . . . is not predictive of the absence of future interference."⁴

Itron is obviously incorrect in this claim. Itron's statement, however, does reveal the extent to which Itron's advocacy has run astray of the demonstrated facts of this situation and the spectrum sharing capabilities of Progeny's M-LMS network.

Progeny M-LMS Network Design

As directed by the Commission, on January 27, 2012, Progeny filed a paper describing the technical design of its position location network.⁵ The details of Progeny's network design have not

³ See Itron, Inc. Response to Progeny Filings, WT Docket No. 11-49, at 6 (Feb. 11, 2013) ("*Itron Response*").

⁴ *Id.* at 6.

⁵ See Wide Area Positioning System Network Description (included as Attachment 1 to Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 11-49 (Jan. 27, 2012)) ("*Progeny Network Description*").

changed since Progeny submitted its January 2012 description. Nevertheless, Itron and others have raised questions about Progeny's M-LMS network design that justify repeating and providing further detail regarding the network configuration that Progeny will employ.

Progeny Transmitter Heights

Progeny is placing its transmitter beacons at the highest available points in and around the communities where location services will be provided. As Progeny explained in its January 2012 filing,

NextNav's beacons transmit at up to 30 watts ERP per channel and are preferably placed at the highest available points on existing broadcast, paging or cellular towers. NextNav is deploying its system primarily using omnidirectional antennas to cover as much area as possible with as few sites as possible. This contrasts with cellular and other two-way systems that seek to transmit and receive as much energy as possible into a given area without causing self-interference. Because NextNav operates a broadcast-only network, it will not require additional sites to increase capacity as the number of users increases.⁶

Itron has repeatedly disregarded Progeny's description of its network. Most recently, Itron has argued that, in order for Progeny's network to locate wireless devices at the ground floor or in the basements of structures, Progeny will need to place its transmitters "at low elevations throughout their [sic] entire coverage area to locate in basement levels."⁷

Itron's argument evidences a lack of understanding regarding how a multilateration network works. In order to optimize coverage and penetration, multilateration beacons are most appropriately placed at the highest sites available surrounding the covered area (in essence trying to mimic the 'look angle' of a GPS satellite). The availability of Progeny's signals in buildings and basements does not require low elevation sites in close proximity, but instead results from its signal modulation techniques, the critical aspects of which are discussed below. Although the exact elevations of Progeny's transmitter antennas will be different in every market, for illustrative purposes Progeny has provided below statistics on the average antenna heights for all of the hundreds of active beacon transmitters that Progeny is operating today across the nation.

Progeny Transmitter Antenna Heights	HAAT (Feet)
Average Height of all Transmitters	433
Median Height of all Transmitters	305
Minimum Antenna Height of Highest Quintile	533
Maximum Antenna Height of Lowest Quintile	205
Average Height of Highest Quintile	1,091
Average Height of Lowest Quintile	142

⁶ *Id.* at 1-2.

⁷ *See Itron Response* at 5.

Based on these statistics and contrary to Itron's speculation, it is evident that Progeny is placing its transmitters on the highest locations available in each community, which has both optimized the location accuracy of its network and has minimized the potential for interference to Part 15 devices.

The success of Progeny's strategy of placing its transmitters at the highest available locations is borne out by location accuracy tests conducted by Working Group 3 of the Commission's Communications Safety Reliability and Interoperability Council ("CSRIC"). These tests were conducted by an independent third party test house and were done cooperatively with the four major national wireless carriers and public safety organizations. The testing was conducted in a comprehensive manner to be consistent with standards established by the Alliance for Telecommunications Industry Solutions (ATIS), which specifies the relevant testing methods for indoor building testing (including ground floor, parking garages, stadiums, convention centers, and other challenging radio frequency propagation environments).⁸ This testing was completed with Progeny's existing network of high elevation beacons. Although the test results will not be released until March 6, 2013, the Commission is in possession of the draft test results and can use them to confirm the ability for Progeny to achieve accurate indoor location, including ground floor location, utilizing a minimal number of transmitter beacons deployed at high site locations.

Progeny Transmission Length

A second aspect of Progeny's M-LMS network design that was recently challenged by Itron is Progeny's use of 100 millisecond beacon transmissions to broadcast location information and barometric pressure calibrations to tracked devices. Itron claims that Progeny's 100 millisecond transmissions are spectrally inefficient because the described data could conceivably be conveyed in a transmission that is 2 or 3 milliseconds in length.⁹ Again in this instance, Itron's assertions display a surprising lack of understanding regarding the fundamental design principles of a multilateration location system.

In order to design a location system requiring the least number of beacons, the Progeny system employed DSSS modulation, which takes advantage of coding gains and extended coherent integration intervals to achieve an exceptional receive sensitivity similar to GPS receivers. Although Itron is correct in noting that the timing and barometric data could be sent much more quickly, doing so would dramatically reduce the system gain and receive sensitivity, thereby necessitating a massive increase in the number of beacons required. An additional technical requirement of receiver sync places a minimum time limit on the transmit duty cycle. These factors enable wireless devices to establish a lock on the Progeny signal in deep indoor locations where Progeny's minimal signal strength is often significantly below the noise floor. (The GPS network uses this same technique to establish reception with GPS-enabled devices.) In essence, a key reason Progeny's service coexists well with Part 15 devices is because minimal numbers of beacons are required in each market, and the very low signal strength of the beacons is often below the noise floor and is therefore indistinguishable to Part 15 devices, particularly in an indoor environment where most Part 15 devices operate.

⁸ See Alliance for Telecommunications Industry Solutions (ATIS), Emergency Services Interconnection Forum (ESIF), technical standard ATIS-0500013, "Approaches to Wireless E9-1-1 Indoor Location Performance Testing" (Feb. 2010).

⁹ See *id.* at 2.

Progeny Duty Cycle

As Progeny has repeatedly explained in this proceeding, although the Commission's rules for M-LMS licensees impose no duty cycle requirement, Progeny has incorporated into its network a duty cycle of no more than 20 percent for each transmitter, with the vast majority of transmitters operating with only a 10 percent duty cycle. The use of a very low duty cycle ensures that even Part 15 devices operating in close proximity have substantial opportunities to operate co-frequency with Progeny in the quiet periods.

Itron persists in challenging the existence of this low duty cycle, arguing that, because of the synchronization of Progeny's beacons (each operating in a different time slot), "[t]he only place that Progeny can really prove that it has a low duty cycle is in the basement of one of their sites."¹⁰ Again, the voluminous test reports clearly contradict Itron's assertion. For example, the January 27, 2012 test report that was conducted by an independent consultancy using numerous types of Part 15 devices and operating conditions (including devices outside and in elevated conditions), concluded that

[i]n nearly all cases in which a WAPS beacon signal was detected, the signal artifact of only one WAPS transmitter could be identified on the resulting audio sample. The cases in which two beacons were detected were rare and in no test case were more than two beacon signals detected.¹¹

In commenting on the January 2012 test report, even Landis+Gyr acknowledged that this low duty cycle "is much preferred over a system that is always transmitting."¹²

Progeny's low duty cycle was recently corroborated by Plantronics Inc., which apparently conducted its own testing on December 14, 2012 in downtown San Jose at a location nearly adjacent to three closely spaced Progeny transmitters and reported that it was able to detect the signals only from the immediately adjacent Progeny beacons.¹³

In fact, the only way to detect the signals of more than a few Progeny beacons is to place a Part 15 receiver on a tall pole in direct line of sight with multiple Progeny transmitter locations. This is the approach that Itron and Landis+Gyr employed in the joint test process. Itron continues to argue that spectrum analyzer "waterfalls" contained in the Itron-Progeny Joint Test Report show that Progeny's signal "is nearly continuous."¹⁴ What the waterfall plots show, however, is that the signals from multiple

¹⁰ *Itron Response* at 6.

¹¹ Coexistence of M-LMS Network and Part 15 Devices, Spectrum Management Consulting Inc. (Jan. 27, 2012) ("*Independent Field Test Report*") (included as an attachment to Letter from Bruce A. Olcott, Counsel to Progeny LMS, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 11-49 (Jan. 27, 2012)).

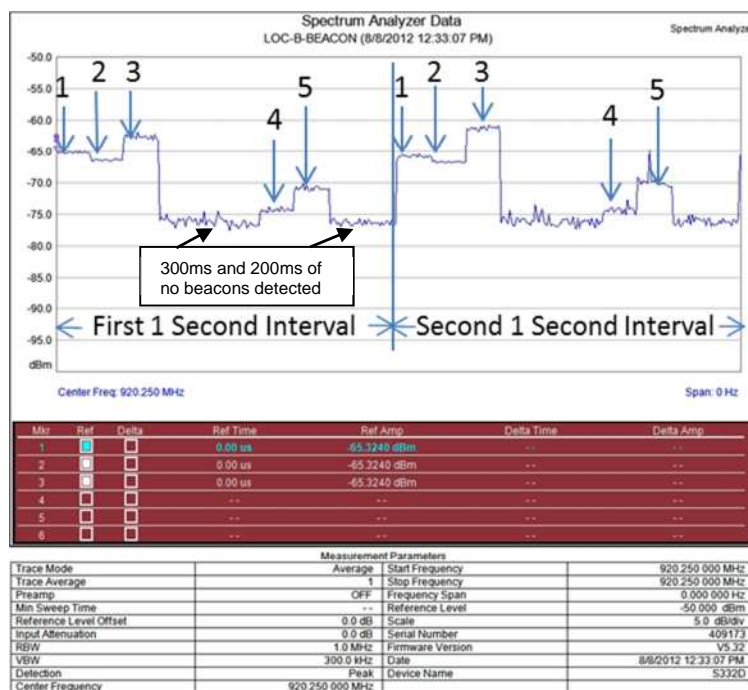
¹² Comments of Cellnet Technology, Inc., a Landis+Gyr Company, WT Docket No. 11-49, at 5 (March 15, 2012).

¹³ See Comments of Plantronics, Inc., WT Docket No. 11-49, at 3-4 (Dec. 21, 2012).

¹⁴ *Itron Response* at 6 (citing to Itron-Progeny Joint Test Report at 15).

line-of-sight Progeny transmitters can be “detected” by a spectrum analyzer in an elevated location. Being able to detect a Progeny signal, however, in no way indicates that the signal is strong enough to pose a risk of interference to Part 15 devices.

A more instructive chart was produced by Landis+Gyr for inclusion in its joint test report. The chart below is based upon data taken at a downtown San Jose test location with the densest concentration of Progeny beacons and shows the signals of beacons during a two second interval. It can clearly be seen that three nearby beacons are heard in succession, then there is no beacon detected for 300 milliseconds, then two more distant beacons are heard at lower power levels, followed by another 200 milliseconds of time where the beacon energy again falls below the noise floor at this location.



Iron objects to reference to the Landis+Gyr chart above, claiming that the chart “shows the signal of just one beacon, which would not even be sufficient for determining location.”¹⁵ The chart above, of course, shows the signals of five different Progeny beacons (each shown twice over a two second interval). Further, as discussed in a prior section of this letter, Progeny’s technology permits wireless devices to multilaterate their own locations using Progeny signals at much lower signal levels than a typical Part 15 device can detect. Thus, even though a Progeny signal may not be detectable by a signal analyzer below the noise floor, wireless devices equipped with Progeny’s hardware and software may still be able to use these very weak signals to calculate their locations. As an example, at the location noted in the Landis+Gyr spectrum analyzer plot above, a Progeny M-LMS receiver was used to detect and successfully multilaterate signals for 11 different beacons.¹⁶

¹⁵ *Id.* at 7.

¹⁶ See Progeny-Landis+Gyr Joint Test Report, WT Docket No. 11-49, at 6 (Oct. 31, 2012).

Part 15 Joint Test Results

In the following section, Progeny addressing several incorrect claims that Itron has repeatedly made regarding the joint test results. Although the issues are addressed individually below, it is important to reflect on what they indicate in combination – Progeny’s M-LMS network will never prevent a Part 15 device from functioning in its normal manner, even in those limited cases in which a Part 15 device is extremely close to a Progeny transmitter. There are no exclusion zones around Progeny’s M-LMS transmitters. Tests of Part 15 devices in “break case” conditions have shown no evidence of receiver overload. Further, in nearly all test conditions, Part 15 devices can continue to transmit data even in the same 4 MHz of spectrum used by Progeny’s service. It is therefore evident that Progeny’s M-LMS network will not cause unacceptable levels of interference to Part 15 devices.

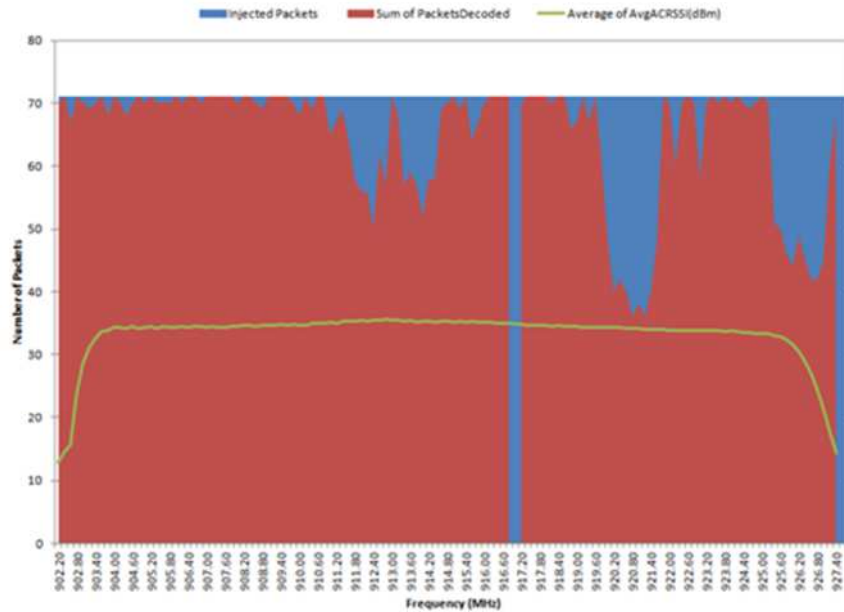
Sharing on Specific 4 MHz Used by Progeny

Itron has repeatedly claimed that the joint tests demonstrate that Progeny’s M-LMS network “removes at least 4 MHz of much-needed and much-used unlicensed spectrum.”¹⁷ In making this claim, Itron has never cited to the joint test results, preferring instead to build its case on inflammatory unsubstantiated rhetoric.

In response, Progeny provided a detailed analysis of the test results in its January 11, 2013 response. Progeny’s analysis included charts depicting joint test results involving average, close proximity and break case test conditions, in each of which Itron’s network continued to transmit data in the exact 4 MHz of spectrum where Progeny’s network operates.¹⁸ Rather than repeat this analysis here, Progeny provides below only a single chart, one of Itron’s much touted packet error rate (“PER”) tests, conducted in a break case condition with Itron equipment co-located with a Progeny transmitter. Even in this worst case condition, the PER test clearly shows that Itron’s equipment was able to transmit and receive more than half its desired data on the channels that are directly co-frequency with Progeny’s service. The chart also shows that Itron was able to transmit essentially all of its desired data in the frequencies immediately adjacent to Progeny’s signals.

¹⁷ *Itron Response* at 2.

¹⁸ *See* Response of Progeny LMS, LLC, WT Docket No. 11-49, at 34-37 (Jan. 11, 2013).



Itron Test 25, Location 3: Urban (colocation and close proximity)

The chart above not only shows that Itron was able to transmit data on the same 4 MHz of spectrum that are used by Progeny, but also shows that Itron was unable to transmit any data on the frequencies around 917 MHz (well below Progeny's spectrum) due to the presence of an unidentified interferer, possibly another Part 15 device operating in the same area. What Itron's PER tests therefore demonstrate is that the impact of Progeny's position location service is often much less than the impact that already results in the 902-928 MHz band due to the prevalence of unlicensed Part 15 devices that were not designed with the extensive interference mitigation measures that Progeny has employed.

30 Watt Transmitter Power

Itron and others have repeatedly attacked Progeny's use of 30 watt ERP transmit beacons for its M-LMS network even though the Commission's rules specifically authorized this transmit power.¹⁹ In fact, the Commission's rules provide that 30 watt ERP transmit powers can be used both by fixed transmitters and also by the mobile devices that are being tracked. Such mobile devices would frequently be located immediately adjacent to Part 15 devices creating greatly increased potential for interference, which is why Progeny sought a waiver of the Commission's rules to forgo this two-way transmission requirement. Progeny has also avoided the use of 300 watt ERP fixed transmitters even though the Commission's rules authorize the use of such high power transmitters in the upper edge of the 902-928 MHz band.

Given Progeny's placement of its transmitters at high sight locations, it will be very unusual for a Progeny transmitter to be located close to a Part 15 device. Granted, as Itron notes, some Part 15 devices are used on the highest floors of tall buildings,²⁰ but they are normally inside where the benefit of about

¹⁹ *Itron Response* at 2.

²⁰ *Id.* at 5.

20 dB of attenuation will prevent interference to their operations. Even in those limited cases where a Part 15 device may be located outside in an elevated location, the joint field tests have clearly shown that such Part 15 devices will continue to function normally.

Part 15 Receiver Overload

One of the most heavily debated issues throughout this proceeding is whether the higher power of Progeny's transmitter beacons could cause receiver overload to Part 15 devices. In urging that joint tests be conducted, Itron and its technical consultant, RKF, extensively argued that Progeny's 2011 tests failed to test for overload and therefore additional testing was necessary.²¹ It will therefore come as a surprise to the Commission that Itron now claims that, with respect to the Itron-Progeny joint tests, "overload was not tested."²²

In all of the tests that have been conducted, both in 2011 and in 2012, including the tests that were conducted with Itron and Landis+Gyr, many of the test configurations were specifically designed to address locations where it was expected that overload would occur (*i.e.*, directly adjacent to Progeny beacon locations). These tests included placing Itron and Landis+Gyr receivers outside on tall poles directly adjacent to Progeny transmitters. If overload was going to result, it would have been detected and reported as part of the joint test results or the independent test results.

Despite the fact that receiver overload was not detected in any of the tests that were conducted, Itron misleadingly claims in its most recent filing that "there is some evidence" in the record that Progeny's system might cause receiver overload to some unlicensed users.²³ The "evidence" that Itron cites to, however, consists only of two *ex parte* letters that were filed by Inovonics and Plantronics. The Inovonics letter states only that Inovonics is "very concerned about overload to its receivers from Progeny's high power signals," but provides no data or evidence suggesting that such overload may actual occur.²⁴ The Plantronics letter further explains that "overload is a substantive issue for some chipsets used in Part 15 voice services" and speculates that it might be a factor in spectrum sharing with Progeny's service, but again provides no evidence that overload will actually result.²⁵

Considered in the absence of field test results, some question might exist regarding the potential for receiver overload. The Commission, however, has before it extensive test results from about 18 months of comprehensive testing, including independent testing that was conducted by Progeny in 2011, joint testing that was conducted with Itron, Landis+Gyr and WISPA in 2012, and unilateral testing that was conducted by Itron in October 2012 and Plantronics in December 2012. None of these test results – not even the test results that were filed by Plantronics – include any evidence of receiver overload to Part

²¹ See Comments of Itron Inc., WT Docket No. 11-49 at 11 (March 15, 2012) (citing RKF Engineering Solutions, LLC, Analysis of Progeny Part 15 Test Report, WT Docket No. 11-49, at 11 (March 15, 2012)).

²² *Itron Response* at 5.

²³ *Id.*

²⁴ *Inovonics Letter*, WT Docket No. 11-49, at 2 (Jan. 28, 2013).

²⁵ *Plantronics Letter*, WT Docket No. 11-49, at 6 (Jan. 28, 2013).

15 devices. The Commission should therefore conclude that this concern has been thoroughly considered, objectively tested, and appropriately should be dismissed as unfounded.

Joint Test Methodology

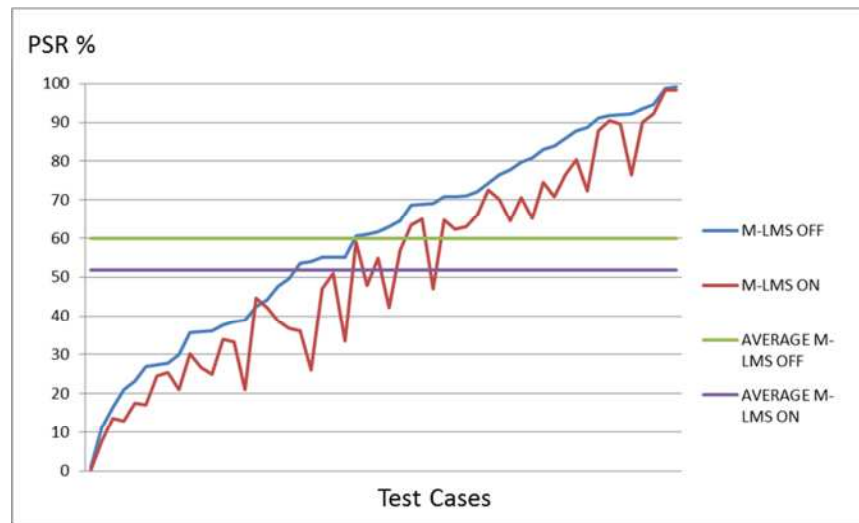
Obviously aware that the joint test results do not support the arguments that Itron has been making before the Commission and elsewhere, Itron attacks the methodology of the tests that it jointly designed. For example, Itron claims that the system level tests that were conducted on Itron's automated meter reading devices were "invalid" because "Progeny failed to test any endpoints located in the outer ring of a [Cell Control Unit] Reader's service area, testing only a few endpoints located in the inner ring and a few located just outside the inner ring."²⁶

What Itron fails to acknowledge is that, during the joint tests, its engineers unilaterally selected the placement of the Itron transmitters and receivers that were subjected to joint testing. Itron engineers were also responsible for identifying other test conditions, including choosing the test locations, the number of endpoints, the length of tests, the heights of receiver units, the transmission intervals and the number of total transmissions. Only when the actual performance failed to reveal the desired level of impairment did the documented test results suddenly become "invalid" in Itron's view.²⁷

In reality, however, Itron's placement of its transmitters and receivers during the test process was appropriate to replicate the configuration of Itron's meter reading networks in real world conditions. Itron's engineers also sought to replicate the most extreme conditions by placing Itron's transmitters and receivers as far apart as possible while still being able to transmit some amount of data between the Itron transmitter and receiver with Progeny's network turned off. In some test configurations, the Itron transmitter and receiver under test were barely able to transmit data with Progeny's network turned off, and in a few test configurations the transmitter and receiver were completely unable to transfer data with Progeny's network turned off. This is depicted on the far left side of the chart below (an admittedly familiar chart for those following this proceeding), with the blue line documenting several tests in which the packet success rate for Itron's distantly-placed transmitters and receivers dropped to zero, or near zero, with Progeny's network turned off.

²⁶ *Itron Response* at 4-5.

²⁷ *Id.* at 5.



Aggregate Throughput Success Percentages for Itron Equipment

Itron is now arguing that some of the joint tests should have been conducted with the Itron transmitters and receivers even further apart. The test results, however, clearly indicate that numerous of the tested receiver distances were already at the edge of coverage, with very marginal packet success rates with or without the presence of the Progeny beacon signals. In fact, Itron complains that the roughly 40 percent packet error rates that were revealed in the joint test results are not indicative of the normal performance of its networks (although this is, in fact, what the test results reveal), while also complaining that the joint tests were not challenging enough and that endpoints needed to be even more distant from the receivers. So Itron is now simultaneously asserting that the joint tests were not demanding enough, but that their equipment performance in the joint test configuration was worse than experienced in a normal representative network.

Itron Equipment Employed in the Tests

Itron also disputes Progeny's interpretation of the joint test results, claiming that Progeny has made incorrect assumptions regarding how Itron's AMR devices work and the interference mitigation techniques it employs.²⁸ For example, Itron argues that Progeny "is mistaken in claiming that Itron's system is one-way" and notes in a footnote that certain of its equipment is capable of two-way operation.²⁹ That is consistent with Progeny's understanding as well. The only equipment Itron offered for joint testing, however, was one-way equipment, and Itron does not dispute that the manner in which it achieves reliable end-to-end performance from its one-way equipment is by the spectrally inefficient approach of repetitively sending the same data repeatedly at regular intervals to ensure the data is eventually received in spite of the inherently noisy Part 15 environment.

Although such a simplistic one-way approach is not useful for smart grid applications, it appears to work effectively for simple meter reading, and none of the results from the joint testing indicates that

²⁸ *Itron Response* at 3.

²⁹ *Id.*

the existence of Progeny's network prevents this approach from continuing to successfully and reliably collect meter reading information using Itron's one-way AMR devices. In fact, repetitively sending meter reading information every few minutes on a one-way system, even with a modest packet success rate, does effectively provide a very high likelihood of a successful reading being received.

For example, using the average packet success rates noted in the joint tests (59 percent success with Progeny's network off and 52 percent with Progeny's network on), and repetitively sending information every five minutes (Itron's factory default setting),³⁰ the Itron system would achieve a 99.999 percent packet success rate within an hour and a half with or without the Progeny network transmitting (and a roughly 99 percent success rate within as little as a half hour). For a simple meter reading application, repetitively sending meter information using low cost, one-way equipment can achieve the same high-reliability performance that "smart" two-way equipment achieves.

Itron is aware that Progeny also worked with Landis+Gyr to test more sophisticated two-way equipment that is being used in emerging smart grid applications. The results of the two-way tests of more current generation equipment revealed that Progeny's M-LMS network had virtually no impact whatsoever. Specifically, the two-way Landis+Gyr AMR devices experienced virtually no impact on data throughput when the Progeny network was turned on.³¹ Since much of the focus of other commenters, such as the Utilities Telecom Council, is on potential concern for future smart grid applications, it is important to note the seamless performance that two-way telemetry network devices provide regardless of whether Progeny's beacons are transmitting.

Itron's Unilateral PER Tests

Finally, Progeny noted in its January 11, 2013 response numerous deficiencies in the test results that Itron filed with the Commission on December 17, 2013 addressing the unilateral PER tests that it conducted in October with Progeny's network always on. The discrepancies include the fact that Itron disclosed test results for 12 test locations, but claimed to have actually conducted tests in 17 locations, and further identified a total of 39 test locations. Itron also failed to disclose the injected signal strengths that were used in its PER tests, providing charts with eleven (undisclosed) injected signal strengths for most of the PER tests, but revealing the results for only nine signal strengths in several locations (Locations 21, 23 and 39) and only eight signal strengths in one location (*See* Location 16).

³⁰ According to the User Manuals for the Itron end user devices that were used in the joint tests, the devices can be set to re-transmit the same data every five minutes, or every 30 or 60 seconds "for exceptionally hard-to-read applications (such as meters installed on roof tops or in sub-basements)." Itron also notes that it makes available a 900 MHz Remote Antenna "to increase reading range." The User Manuals are available in the FCC's database, but are not specifically referenced by FCC ID number in this footnote pursuant to Itron's instructions for confidential treatment of its proprietary materials.

³¹ The joint test results of two-way Landis+Gyr equipment showed an average reduction in data throughput of less than one percent (0.12%), although in some instances data throughput improved immeasurably and in some instances it decreased immeasurably in the presence of the Progeny beacon signals.

In its recent response, Itron addresses one of these multiple discrepancies, the fact that Itron disclosed test results for only 12 of the 17 or 39 locations where it tested. Itron now claims that it included in its December 17, 2012 filing “all testing that it conducted in October 2012.”³² Itron’s December 17, 2012 filing, however, clearly provides test results for only 12 locations, while claiming on page 3 and 4 of the presentation that significantly more than 12 locations were tested. Thus, Itron needs to explain which of its filings are in error, either its February 11th filing or its December 17th filing, since one of them must be incorrect.

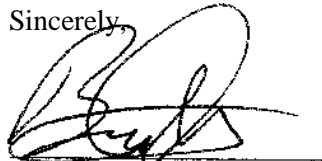
Itron also now claims that, while it identified 39 potential test locations, it did not test in all of them, but instead selectively chose test sites based on the “usefulness of the data that could be obtained.”³³ Unbiased testing, however, necessitates a selection of test locations based on a fair representation of the actual conditions that are likely to be experienced in real life, and not based on promoting Itron’s overt goal of discouraging spectrum sharing in the 902-928 MHz band, including spectrum sharing that would greatly enhance the E911 position location capabilities of emergency first responders and, with it, the safety of the general public.

Conclusion

The record in this proceeding clearly demonstrates that Progeny’s position location network will not inhibit or impair the operation of Part 15 devices in the 902-928 MHz band, including the AMR networks constructed by Itron for its energy distribution customers. The Commission should therefore promptly conclude that Progeny has satisfied its obligation to demonstrate that its network will not cause unacceptable levels of interference to Part 15 devices and authorize Progeny to begin providing position location services on a commercial basis to support the public safety community.

Thank you for your attention to this matter. Please contact the undersigned if you have any questions.

Sincerely,



Bruce A. Olcott
Counsel to Progeny LMS, LLC

³² *Itron Response* at 7.

³³ *Id.* at 8.